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ABSTRACT

This study examined the influence of literacy-enriched play centers on preschoolers' conceptions of print. Subjects, 25 boys and 12 girls aged 4 and 5 years from 2 urban preschool classes, were systematically observed before and after 5 basic design changes were made in the classrooms. Four distinct play centers (post office, library, office, and kitchen) were created, and the subjects were allowed to play freely in any of the centers. No attempt was made to obtain a matched sample as a control group at this stage of the project. Quantitative and qualitative results indicated that (1) children spontaneously used almost twice as much print for play purposes than prior to the intervention; (2) childrens' scores on a test of print awareness rose considerably; (3) the duration and density of literacy demonstrations increased considerably after intervention; and (4) literacy-related play themes in the enriched play centers appeared more instrumental to the play experience. Findings suggest that literacy-enriched play centers have the potential to influence young children's literacy activities in early childhood settings. (A figure illustrating the design of the play environments and two tables of data are included; 22 references are attached.) (RS)

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The Influence of Literacy-enriched Play Settings
on Preschoolers' Conceptions of Print

Of the range of activities which may engage young children in literacy, none is perhaps more self-directed than play. As children discover and invent literacy through play, they develop important generalizations about written language as a meaningful activity (Harste, Woodward & Burke, 1984). Indeed, recent research suggests that preschoolers' active involvement with literacy through play is an important developmental stage in becoming literate (Goelman, 1984; Y. Goodman, 1984). In this capacity, play offers enormous potential as a resource for literacy learning in the early years.

There has been a tendency, however, to overlook play as a curricular tool in emergent literacy. Although Vygotsky (1978) hypothesized a central role for play in literacy development, the traditional notion that children are not "ready to read or write" before schooling has steered educators away from promoting literacy behaviors in play environments. Only recently, in fact, has play even been seriously considered as a rich contextual setting for observing emerging literacy behaviors (Galda, Pellegrini & Cox, 1989; Jacob, 1984; Pellegrini, 1985; Schrader, 1989; Yawkey, 1982).

Overlooking play as a context for written language has had at least two unfortunate consequences. With the exception of the book corner, print has not typically flowed through in-school

play environments as it may in many homes and community settings (Leichter, 1984). Since it has been documented that children are spending an increasing amount of time in these early childhood settings (Kagan, 1989), fewer opportunities may be available for them to become involved in naturally-occurring literacy routines, such as going to the grocery store, the Post Office, and the library.

A second consequence closely follows. By not using play as a context to foster literacy, professionals are missing out on opportunities to promote children's emerging conceptions of reading and writing from a developmental perspective. In postponing written language learning to be taught more 'formally' outside of a play setting, we run the risk of having literacy become less contextualized and less functional, and, therefore, less meaningful from the child's point of view, making literacy learning at some later stage seem unnecessarily difficult and irrelevant (K. Goodman, 1986).

In contrast to these practices, we propose that play can serve not only as a curricular tool in support of literacy development, but also one that influences it. If afforded more opportunity to engage in literacy-related play, children may reveal and share with one another their preferences and competencies, and in so doing, create the conditions necessary for socially-mediated literacy learning. Indeed, play may serve as an important resource for children to explore their developing conceptions of the functions and features of print in the

preschool and primary school years.

To explore this hypothesis, we designed a study to examine the influence of literacy-enriched play centers on preschoolers' conceptions of print. Specifically, the study addressed the following questions: 1) Do literacy-enriched play centers influence the frequency of literacy demonstrations in the spontaneous play of preschoolers?; 2) Do these play centers enhance preschoolers' concepts about print?; 3) In what ways might physical design changes in the play environment influence the nature of children's print activities in play?

METHOD

Subjects

Thirty-seven children (25 boys; 12 girls), ages 4 and 5, from two urban preschool classes (N=20; N=17), participated in the study. The preschool served families from diverse ethnic backgrounds and socio-economic status levels. Both classrooms were in close proximity to each other, were similar in spatial arrangement, and included identical play areas: housekeeping, blocks, small manipulatives, book and art corners. Few print materials, aside from books in the book corner, were included in these areas in either classroom.

The intervention design

To examine the effects of literacy-enriched play centers on children's literacy demonstrations, the physical environments of both classrooms were redesigned. Since design changes may effect children's play behaviors more broadly (Johnson, Christie &

Yawkey, 1987; Morrow, 1989), it was important that these modifications take into account existing spatial arrangements as well as common functions of reading and writing among preschoolers as evidenced in our previous research (Neuman & Roskos, 1989). In this respect, an understanding of the environmental setting as well as information from the child's point of view were considered in the intervention design. With these considerations in mind, five basic design changes were made in the classrooms:

1. All play areas were more dramatically carved away from one another and clearly marked using semi-fixed features, such as cupboards, screens, tables and hanging mobiles.

2. The labelling of items in the physical environment was increased. For example, storage bins for blocks and art materials were identified by illustrated and printed signs.

3. Four distinct play centers were created: Post Office, Library, Office and Kitchen. These centers, resembling activities familiar to children, might be easily linked to literacy activities outside the preschool, and thus might help to facilitate written language use by them on their own terms.

4. The actual physical space was rearranged to allow for movement between the literacy-enriched centers. Based on previous research (Roskos, 1988), close proximity of specific play centers appeared to foster more sustained play themes.

5. Literacy props were inserted into each play center, guided by three criteria drawn from our earlier work:

appropriateness (observed use by young children), authenticity (a real item in the general environment), and utility (usefulness to children in their imitative literacy attempts).

Figure 1 illustrates the design of the play environments, along with an abbreviated list of literacy props.

Insert Figure 1 about here

Procedure

Prior to the intervention phase of the study, three measures of literacy behavior in play were obtained over a two week period. First, using an observational procedure developed by Singer and Singer (1980), each child's actions and language (verbatim) were recorded during their spontaneous free play time for a ten minute period on four separate occasions by two trained observers. A total of 40 minutes of observation was recorded for each child, yielding 148 play protocols. Second, play activity in four different areas (housekeeping, book corner, art table, manipulatives/board games) was videotaped for 30 minutes, four different times, for a total of two hours per play area. Third, each child was individually administered the "Sands" booklet of the Concepts about Print (CAP) test (Clay, 1979).

Following these procedures, the physical play environments of each classroom were enriched during non-school hours with

literacy-related materials. Over the next four week period, no formal observations took place as children became accustomed to these design changes. During these free play periods, teachers and aides were encouraged not to intervene or restrict any areas, but to allow children to freely move through all the play centers.

Using the same observational and videotaping procedures, children's play was then systematically observed once again during a two-week period. "Stones," another form of the CAP assessment, was administered to each child.

Analysis

Play protocols were analyzed for evidence of literacy demonstrations, defined as instances of reading or writing-like behaviors. Such examples included scribbling, marking on paper, pretending to read, book-handling, or attending to print in some manner. Boundaries segmenting each play behavior which included literacy demonstrations were established to allow for the coding of each demonstration. Two indicators were used to establish boundaries: shifts in the focus of the play activity (e.g. switching from playing in the library to the kitchen), and shifts in interaction between the players (e.g., a player initiate play/talk with some one else on a new topic). Coders counted the number of literacy demonstrations for each child during the 40 minutes of observation prior to and following the intervention period. Two research assistants independently coded a sample of 20 protocols to determine the reliability of the coding

procedures; intercoder reliability indicated .98 agreement. Differences of means tests were used to analyze pre and post intervention changes in literacy demonstrations and children's concepts about print.

Videotaped play activity was qualitatively analyzed using the ethnographic procedure of typological analysis (Goetz & LeCompte, 1984). Play frames--play bound by a location and a particular focus or interaction (Bateson, 1955; Sutton-Smith, 1979)--were established and literacy-related frames were isolated for further analysis. Successive viewings of a sample of frames, prior to and following the intervention, were examined to analyze in what ways the literacy enrichment may have influenced preschoolers' literacy demonstrations and play behaviors.

RESULTS

Since there was no attempt at this stage in our work on the literacy enrichment of play environments to obtain a matched sample as a control group, the following results are suggestive and should be interpreted with caution.

Findings reported in Table 1 indicate that the average number of literacy demonstrations in play rose sharply over a two month period, with young children spontaneously using almost twice as much print for play purposes than prior to our intervention. Children's CAP scores, as well, rose significantly during this period. While it is impossible in this study to suggest a causal relationship (i.e. literacy demonstrations "caused" higher CAP scores), these results do suggest that

environments "littered with print" can promote children's interactions with literacy.

Insert Table 1 about here

Though these quantitative changes are important, the qualitative analysis revealed a number of more subtle and complex changes in literacy demonstrations within a literacy-enriched play environment. These changes were characterized by two trends reported in Table 2.

Insert Table 2 about here

One was the striking increase in the duration of literacy demonstrations. Whereas demonstrations prior to the enrichment tended to be quite brief, those following the physical design changes were far more sustained. For example, the average duration of literacy-related play frames was about 1.7 minutes prior to our intervention; following the enrichment, these frames lasted approximately 5.18 minutes.

Related to this trend, was a marked change in the density of literacy demonstrations, that is, the number of demonstrations coded within individual play frames. Following the intervention, these demonstrations seemed to interlink, forming chains of related literacy behaviors. For example, before enrichment there were few connected demonstrations, averaging approximately 1.57

within a literacy-related play frame; after enrichment, however, the literacy-related play frames contained on the average of 9.0 literacy demonstrations. In fact, at times, the literacy demonstrations in these chains were so closely connected that they became almost indistinguishable from one another.

A brief comparison of two play frames illustrate these two trends. For example, prior to enrichment:

> Michael is playing house with Scott in the housekeeping area. He has a piece of drawing paper and a box of markers. After the boys sit down at the table and confer briefly over the paper, they begin to play with different colored markers, testing each color on the paper. They then turn to sorting and stacking pots and pans from the cupboard in preparation for cooking.

All total, in this play frame, there was one literacy demonstration which lasted approximately 30 seconds. As indicated here, writing appeared to be the focus of exploration, rather than utilized in the service of the play more broadly.

In contrast, literacy-related play themes in the enriched play centers appeared more instrumental to the play experience, and therefore, seemed to set off a chain of literacy-related demonstrations of longer duration. For example:

> Michael and Scott are in the Office play center. They are playing"sign-up." They want people "to sign-up" for the homeless. Scott has a small clipboard and pencil. He circulates throughout the classroom, asking different teachers and children to sign their names on his clipboard. Michael remains in the office "writing" at the desk. Periodically he looks up and directs Scott to ask someone else. Finally Scott returns with a list of signatures. Both boys pretend to "enter" the list into the computer. Scott points to names on the list and Michael types. When done, Scott removes the paper from the clipboard and is sent out again to gather more names.

This literacy-related play frame, lasting approximately 15

minutes, suggests that reading and writing activities became more integral and useful to the actual flow of the play itself. In fact, in this instance the print activities are the action which bound the play into a coherent theme.

Upon closer examination, the typological analysis of these literacy related play frames revealed five characteristics of change in the literacy demonstrations indicative of the aforementioned trends.

Literacy demonstrations in the enriched play centers became more **useful**, or purposeful, and more **unified**. Children used literacy to obtain and convey information vital to their play schemes such as to "sign up" for activities and to "read" recipes for meal preparation. Rather than incidental to the play, literacy was pressed into service for some larger goal--the realization of play purpose.

Demonstrations became more **situated**. Explicit play contexts, such as the Office, and the Post Office, provided distinct frames of references and the literacy props in each center served as concrete cues for literacy uses. Contextual explicitness and props supported and helped to situate play themes strengthening the fabric of play and guiding its course. For example:

> Hilary and Dana are sitting at the table in the Post Office play area. Before them are envelopes, seals, stamps, and a mailbox. They are writing letters, then inserting them in the mailbox at the corner of the table. They have repeated a "write a letter, put in an envelope, seal, stamp, and address it" procedure two times. They mail their letters, retrieve them and then pretend to read the messages.

> Suddenly, Hilary begins to scribble rapidly on her paper. She shows Dana her scribbles and Dana says, "Baby, you're bad!" They both giggle and continue making and sending letters to one another.

Further, in contrast to the literacy demonstrations prior to our intervention which seemed frequently isolated and random-like, these literacy demonstrations became increasingly more interactive as children used literacy as a medium for social exchange.

> Kent and Ricky have been trying to get Dana's attention for some time during the play period, but she has not responded. They retreat to the post office and decide to write to her. Huddling together, Kent dictates, "Dear Dana," and Ricky writes. Finally, the note is finished and inserted in an envelope. The boys walk toward Dana at the office play center and pretend to knock.
>
> They approach Dana. "Dana! Dana! Here!" They hand over the envelope giggling and covering their faces with their hands. She smiles scans the envelope, opens it, pretends to read the note, and returns it very carefully to the envelope. Kent leans toward her and says, "You wanna come over to our house?" Then they both run back to the post office and repeat the entire note writing routine.

Along with the greater interaction, came a dramatic change in role-taking as children became postal workers, office managers, advocates of social issues, and librarians. In the following example, children are demonstrating their knowledge of library routines and authenticating role definitions.

> David and Scott are playing in the Library Center. David runs over to the teacher and says: "Mrs. G., want to come and get a book?" She comes to the center.
>
> Both boys help her look for a book. Mrs. G. selects "Where the Wild Things Are." Scott then "marks" a card with a stamp. David records the same information on a larger paper. Scott tells her that the check mark refers to the day she must bring the book back.

In sum, rather than isolated instances of children scribbling or coloring, literacy demonstrations within the enriched play environment tended to become more functional for these young children and more embedded in their play activity. As a result, the play itself appeared to lend greater coherence and meaning to literacy, supporting the children's exploration of its multifunctional nature. In short, as these two activities interacted in the enriched centers, a new and more dynamic relationship between them seemed to emerge.

CONCLUSIONS

The results of our study suggest that literacy-enriched play centers have the potential to influence young children's literacy activities in early childhood settings. The contextualized settings and ready availability of numerous literacy-related props appeared to influence the frequency of children's engagement in reading and writing activities through play.

We would argue, however, that even more important than frequency, these enriched play centers fostered more sustained and involved literacy interactions. In doing so, the literacy demonstrations began to resemble what Heath (1982) defines as literacy events, that is, "occasions in which written language is integral to the nature of the participants interactions and their interpretive processes and strategies" (p. 50). As these demonstrations appeared to gain event-like status, they began to influence not only children's participation in reading and writing, but the play itself. Through children's playful

elaboration and uses of written language, play as a tool to make sense of and learn more about their world was enhanced as well.

Our study, of course, can not provide evidence that enriched play centers necessarily result in increased literacy learning. More controlled studies across varying groups of preschoolers in different setting need to be conducted before such weighty claims can be made. However, our study does suggest that literacy-enriched play centers, can indeed, make a difference in children's literacy behaviors through play. With well-planned design changes in the physical play environment, play may become an increasingly important context for the discovery and exploration of written language.

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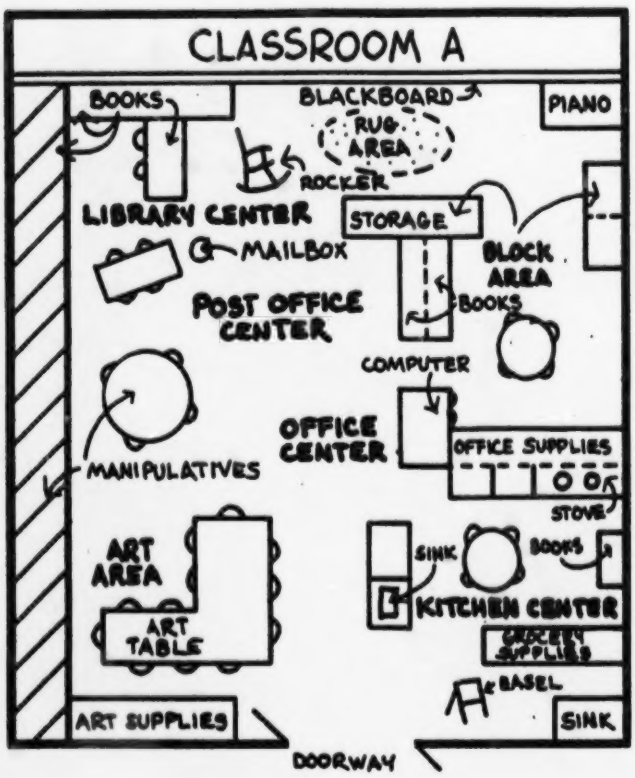
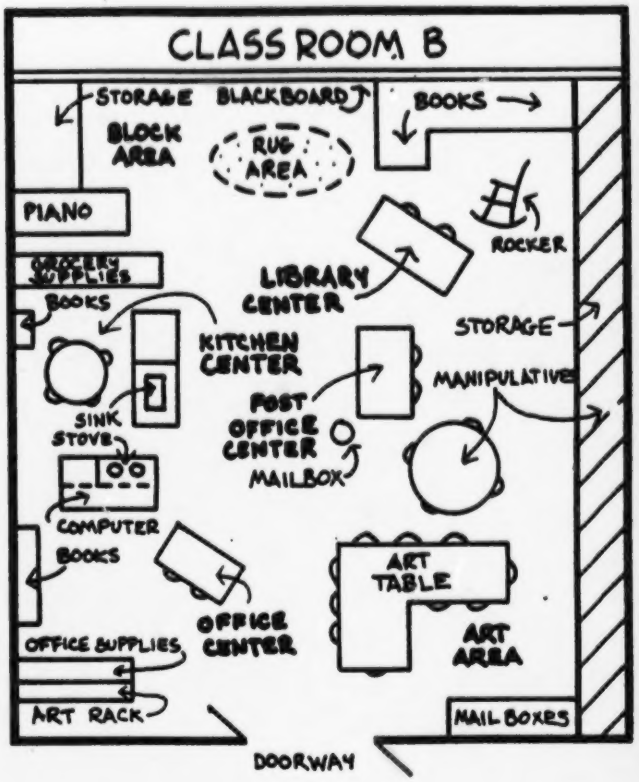
Literacy-enriched play settings

Figure 1. The design of the play environments with literacy props.





Examples of literacy props in centers:

Kitchen play Center

- Telephone books
- A telephone
- Emergency number decals
- Cookbooks
- Food coupons
- Grocery store ads

Office Play Center

- Calendars
- Appointment book
- Signs
- Magazines for waiting room
- Assorted forms

Post Office Center

- Stationery and envelopes
- Mail box
- Computer and address labels
- Posters and signs about zip codes
- Tote bag for mail

Library Play Center

- Library book return cards
- Children's books
- Stamps for borrowing
- Book marks
- Sign in/sign out sheet

Table 1

Effects of a Literacy-Enriched Play Environment:

Mean Score Differences

Variable	Prior to enrichment		Following Enrichment	
	Mean	S.D.	Mean	S.D.
Literacy Demonstrations	1.51	1.95	2.83*	2.9
Conventions About Print (Clay, 1979)	9.16	3.9	11.51**	3.77

* $p < .01$

** $p < .001$

Table 2

Density and duration of literacy demonstrations:

Mean score differences

Variable	Prior to enrichment		Following enrichment	
	Mean	S.D.	Mean	S.D.
Duration*	1.71	.42	5.18	4.38
Density	1.57	.49	9.0	8.14

Note: Duration is measured in minutes